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OUR MUNITIONS OF WAR.

THE three divisions of the Royal Arsenal at Woolwich—the Gun Factories, the Carriage Department, and the Laboratory—may be briefly described as intended to provide, respectively, our guns or weapons of offence; the means of conveying them to the field of action; and the *matériel*, or ammunition and stores, required for their service. Of the last, gunpowder, the largest and most important of all, has a special factory devoted to its production, as the manufacture would be too dangerous to carry on in the midst of other departments; and there is no manufacture of small-arms carried on at Woolwich. But, with these exceptions, everything intended for use in offensive or defensive warfare is turned out from the workshops in the Arsenal. Of the three branches of the establishment, the Royal Laboratory probably presents most features of general interest, from the far greater variety of stores manufactured in it. Its special function is to manufacture ammunition, if the word be taken in its earlier sense as comprehending everything necessary to defence—not only powder and shot, but every store and appliance necessary for the service of great guns (whether smooth-bored or rifled), small-arms, and rockets. The subject naturally falls into these four divisions; but at present the three latter—rifled ordnance, small-arms, and rockets—are in such an active state of transition, that it would be premature to attempt a complete description of the projectiles, stores, &c., used with them.

Shot and shell form the two great classes of projectiles used in modern warfare, but there are others which can hardly be considered as belonging to either; such as the hollow shot, filled with molten iron, known as Martin's shell; carcasses (the ancient fire-balls); light-balls, intended to light up an enemy's proceedings during the night; and smoke-balls, used to suffocate him, or prevent his seeing the operations carried on against him.

Solid shot—at once the most ancient and the simplest form of projectile—were at first made of

stone, afterwards of lead and iron. The stone shot were not sufficiently strong to withstand the shock of the explosion of a charge of gunpowder, so they were superseded by the iron, which came into general use about the end of the fourteenth century. Stone shot, however, were used in action as late as 1807, at the passage of the Dardanelles, by Sir John Duckworth's squadron. Six of his ships were struck by the immense stone shot fired from the gigantic cannon of the Dardanelles. A supply of these shot, averaging twenty-five inches in diameter, and six hundred and seventy pounds in weight, is still maintained by the Turks.

The improvement in the manufacture of solid shot during late years is very marked; they are now made of much truer spherical figure, and of more uniform density and hardness, thereby insuring not only greater accuracy in firing, but greater effect on impact. Recently, shot have been made of solid steel and of chilled iron, for use with the large smooth-bore guns of the navy against armour-plates; but their effect, though superior to that of ordinary round shot, is far inferior to that of the pointed chilled projectiles proposed by Major Palliser for rifled guns. It is worthy of remark, that the success attending the employment of the latter is due, not to the material alone—the introduction of which is not specifically claimed by this inventor, by whom it was proposed in conjunction with a particular form of pointed ogival head. A shot of chilled iron is, therefore, not necessarily a Palliser shot, which consists of a particular combination of form and material, ascertained by long and careful experiment. A pointed shot, to produce a maximum effect, must be of a particular form, corresponding to the material of which it is constructed. Thus, separate shapes of heads have been adopted for pointed projectiles of cast iron, steel, and chilled iron. Increased accuracy of fire is not the only advantage gained by the introduction of rifled ordnance; the artilleryman can now make use of elongated projectiles, obtaining far greater weight of shot, and far greater capacity of shells. Enormous pointed shot, thirty inches in length, and twelve in diameter, weighing six hundred

pounds, and shells of equal dimensions carrying bursting charges of thirty-five pounds of powder, can now be thrown to a distance and with a precision that the gunners of twenty years back could never have dreamed of.

To revert to smooth-bore projectiles, hollow shot, at first introduced by General Shrapnell about fifty years ago, are not now manufactured for service, empty shells being used instead. They are very useful against wooden ships at short ranges, from the great splintering effects they produce, and they can also be fired from light guns. Modifications of the round shot appear to have been introduced at an early date. Some of these, such as chain-shot and bar-shot, have again disappeared; others, such as case, otherwise 'canister' and grape, are still manufactured. The latter seem to have originated in the practice of the early artillerymen of firing at short ranges 'pyrotechnic hail,' consisting of stones, nails, and fragments of iron. Both consist of a collection of small iron balls, placed in the one instance in a tin canister or 'case' equal in diameter to the calibre of the gun; and in the other, bound together like a bunch of grapes, at first with canvas and cord, but now by being placed between perforated iron plates. Their destructive effect against troops in masses, or against the rigging of ships at short ranges, is very great.

The precise date at which red-hot shot were first used cannot now be determined, but the practice of throwing red-hot iron against the enemy is as old as the time of the Romans. The shot used are only the ordinary round shot brought to a dull red heat in a portable furnace. In loading the gun, thick wads of wetted oakum are placed over the cartridge, and the shot being put in, the gun can be handled and laid with as much safety as if loaded with a cold shot, though the steam from the wad may often be seen streaming from the vent before firing. The great value of these projectiles was not known till the memorable siege of Gibraltar in 1780, during which they were fired with great effect by the besieged. Though now in a great measure superseded by the terrible Martin's shell, by means of which molten iron can be thrown against the enemy, red-hot shot will probably continue to be used, as there is no doubt they can be more easily prepared than the former, and can be used in some cases where the requisite appliances for melting the iron could not be employed. The idea of employing molten iron in warfare is exclusively a modern one, and dates from 1854. Like many of our most formidable engines of war, the liquid-iron shells were invented by a civilian. They are merely hollow spherical cast-iron shells, coated internally with loam, and having a filling-hole, through which the molten metal is introduced. Their use is attended with little trouble or difficulty. By means of a small portable cupola furnace, iron may be melted in twenty minutes, in sufficient quantities to yield a ton of the liquid metal every half-hour. The shells are easily filled with a ladle, and the metal

solidifies in the filling-hole almost immediately, after which the projectile can be placed in the gun. On striking, the shell is dashed to pieces, and the liquid iron literally splashed over the object fired at, setting fire to every portion of wood it touches. The effect of such projectiles against wooden ships, as has been ascertained by actual experiment, is of course very great; but the introduction of armour-plating, and the substitution of rifled guns for smooth-bores, will greatly narrow the circumstances under which these formidable projectiles can be employed.

Shells do not appear to have been extensively used till comparatively recent date. Though the construction of the 'grenado,' a small shell of iron filled with powder, and intended to be thrown by hand or by slings, was well understood at an early period, they were not used as projectiles for mortars till the beginning of the seventeenth century, and they were not employed for horizontal fire from guns till about one hundred years ago. About this latter date, shells of another class, the shrapnell, were introduced. Common shells are merely hollow spheres of cast iron, intended to contain a large bursting charge of powder, and having a hole to receive a fuse, by means of which the bursting charge is exploded at the proper time. Attempts have frequently been made to construct a mortar to throw gigantic shells of some feet in diameter. The first was Mr Mallet's, who succeeded so far, that a few shells thirty inches in diameter, facetiously termed 'Palmerston's pills,' were actually thrown in the marshes at Woolwich before the mortar gave signs of yielding. There can be no doubt that if shells of the diameter he proposed could be thrown into an enemy's town, very few of them would be required to decide its fate. This was actually proved at the siege of Antwerp. Shells fired horizontally from guns may be either arranged so as to burst before impact, in which case the pieces, partaking of the motion of the shell at the time of bursting, fly forward, spreading out in a widening cone, and acting as a charge of case or grape; or to lodge and burst after striking, as mortar-shells. They would be used in the former manner against troops; in the latter against houses, breastworks, or cover of any kind under which an enemy might shelter himself, in which case their effect is mainly or entirely due to the bursting charge they contain, which is purposely made as large as possible, to obtain the greatest possible disruptive effect. The reverse is the case with shells of the shrapnell class, which derive their effect entirely from the charge of the gun, the bursting charge in them being kept as small as possible, so as just to open out the shell, and allow the bullets with which they are filled to strike the object aimed at without lateral scattering, and with the velocity possessed by the shell at the moment of rupture. The formidable effect of shrapnell shells is admitted by all artillerymen. They were first used against the French at the battle of Vimieira with marked success; and many

of our greatest generals have since borne testimony to their value and efficiency.

The practice of throwing burning compositions to fire the buildings, shipping, or warlike engines of an enemy, is of course as old as the art of war itself. The Greek-fire of the ancients is well known, though its effects appear to have been greatly exaggerated. The Americans employed an incendiary substance, called by the same name, at the siege of Charleston in 1863; and though the practice was condemned as barbarous, and officially protested against by the besieged as inhuman, its effects could not be so destructive or appalling as the molten iron of Martin's shells, which have been introduced into our service without scruple. The 'carcasses' of to-day are not intended to destroy life, but are used only to set fire to buildings or shipping. They consist of a mass of fiercely burning composition, enclosed in an iron shell, having three vent-holes for the escape of the flame. The earlier ones were made by enclosing the composition in a skeleton frame of iron hoop, strengthened with ribs of the same metal; and the name carcass appears to have originated in some play on these words. The composition burns with such intensity when thoroughly ignited, that water will not extinguish it; but the value of carcasses as incendiary projectiles is lessened by the fact, that they can be quickly smothered by throwing earth over them; and as there is no danger in approaching them, or much difficulty in handling them, they can be thrown overboard without risk if they fall on board ship. The same applies to the old-fashioned light-balls, which much resemble carcasses, only the composition with which they are filled produces a bright flame, and is intended to light up and discover the enemy's working-parties by night. It was found, however, during the sieges in Spain, that our men had no difficulty, and little risk, in running up and smothering the light-balls as they fell; which led Sir John Jones to recommend that such projectiles should be rendered dangerous to approach, by having a shell or grenade fixed to them, which should explode at uncertain periods of their burning. The Americans seem to be the only nation which has adopted this plan. The introduction into our service of the beautiful parachute light has rendered it unnecessary.

The idea of a floating or suspended light seems first to have occurred to the ingenious Sir William Congreve, the inventor of the rockets which bear his name, about the beginning of the present century. The parachute light can be used at much greater ranges; and once the case is opened out, and the light, suspended from a large umbrella-shaped parachute of calico, begins to burn, it floats along with the wind, throwing a clear light over a large extent of ground, and affording ample time to besieged or besiegers to direct their guns against a threatened attack. The present Boxer parachute was introduced in 1855, and can be fired from a mortar. It consists of a hollow sheet-iron case, in two halves, containing a large parachute of calico tightly folded up between them, to which is attached a small iron cup carrying the light composition, and furnished with a fuse, which can be set so as to burst open the case, and ignite the composition at any part of the projectile's flight. Though some of these lights were made and issued before the close of the Crimean

war, they have not as yet been tested in actual warfare; but from the highly successful and beautiful experiments with them at Shoeburyness and Woolwich, it cannot be doubted that they will prove of the greatest value in siege operations, and probably also for occasional use in the naval service. Some were fired during the peace illuminations in 1855, and were most effective.

It is pleasant, when glancing over the various classes of projectiles manufactured in the Royal Laboratory, to find some which are principally used in furthering the ends of science, and others which are specially designed to save human life—not to destroy it. Thus, smoke-balls, the modern representatives of the ancient 'stink-balls' of the seventeenth century—hollow pasteboard shells, filled with burning materials, mixed with pitch and tallow, and originally intended to suffocate the enemy in mines, casemates, or confined situations—are now mainly used as signals in the Arctic regions, where a column of thick black smoke, rising in the clear frosty atmosphere, over a snow-covered landscape, must be visible at great distances. And Manby's shot—projectiles fitted with a wrought-iron eye at one end, and with a cavity for carrying a light at the other—are used for throwing a line from shore to a stranded vessel. Their use, however, is attended with the disadvantage that a mortar is required to fire them from. This has latterly led to the substitution of a life-saving rocket, which is not only more portable, and hence more likely to be of use in out-of-the-way places, but is also more accurate in its flight, and carries its own light with it, enabling the crew of the shipwrecked vessel to see and secure the line when thrown.

Gunpowder was at first always placed in the guns loose, by means of long lades; and, in spite of the inconvenience and danger of the practice, it was three hundred years before any attempt was made to place it in cartridges. These were at first only used when rapid firing was necessary, and their employment did not become general, owing to the danger in serving the guns with them. Being made of parchment, paper, canvas, or linen, they were more or less incombustible, and left burning fragments in the bore, which had to be carefully removed before a fresh charge was put in. The vents of the gun were frequently choked, and the pieces rendered unserviceable by fragments of the cartridge-bag being forced into them. It was not till 1778 that Sir Charles Douglas, then captain of H.M.S. *Duke*, suggested serge as a proper material for cartridges; and when his proposals were not treated with the attention they merited, he placed the whole ammunition of his ship in proper cartridges at his own expense. To this and other improvements which this patriotic officer made for facilitating the service of his guns, may be attributed the quick and efficient firing of the *Duke*, then commanded by Captain, afterwards Lord Gardner, in Rodney's great victory four years later, which contributed in a marked degree to the success of the day. The advantages of serge as a material for cartridges, the principal of which is its total consumption by the flame of the powder, are so great that its use soon became universal.

From instructions laid down for the service of the great guns in the fifteenth century, it appears that they must have been nearly as formidable to friends as to foes. The actual

damage they inflicted on the enemy probably bore little relation to the moral effect they produced; while, on the other hand, the charges of loose powder carried about in 'spoones,' and fired by means of red-hot spikes, heated in a charcoal fire with a pair of bellows, must have been a frequent cause of accident in the field. At first, the heated spikes seem to have been actually thrust into the vents of the guns, until the safer expedient of laying a train of priming-powder was thought of. This, in its turn, was superseded by a piece of quick-match placed in the vent; and it was soon discovered that the action of the match was much increased by placing it in a small tube of paper. This led to the invention of the 'tubes,' by which all guns are fired at the present day.

Greater ingenuity seems to have been exercised in the construction of fuses to ignite the bursting charges of shells, than in any other appliance of war. Every country boasts of several; but though all are ingenious, none surpass the fuses in use in the English service, the Boxer, the Armstrong, and the Pettman. Before fuses were invented, grenades appear to have been partly filled with gunpowder, over which was placed a quantity of slow-burning composition, which was ignited before the missile was thrown, and burned down till the flame reached the gunpowder and exploded it. But a rough kind of time-fuse—that is, a fuse that could be adjusted, after a fashion, so as to burn a certain time, and then ignite the bursting charge at the moment required—was in use at a very early period. This consisted of an iron tube, rammed with a composition resembling the modern one now used for fuses; and the setting of the fuse probably consisted in boring out more or less of the composition at the bottom, leaving thus a shorter or longer portion to be consumed before the flame penetrated into the interior of the shell. It appears to have taken a century of artillery-practice to teach the old artillerymen that it was not necessary to light the fuse before placing the shell in the gun; they went on with their dangerous *tire à deux feux*, lighting first the fuse of the shell, and then firing the piece, till accident probably revealed to them that the former was quite unnecessary. Fuses are classed as 'time' or 'percussion fuses': the former can be adjusted before firing to burn a certain time; the latter, placed in the shell with little or no previous preparation, depend for their effect on the shock of impact. There were in 1849 no less than nineteen different patterns of time-fuses in use in our service, all consisting of a simple cone of wood or metal containing a channel of tightly driven fuse composition in the centre, and all intended to be set by sawing off a piece at the lower end, according to the time of flight of the projectile with which they were used. But the fuse composition being unsupported at the bottom, was frequently driven back into the shell by its inertia, causing dangerous premature explosions; and the sawing was a tedious, troublesome, and occasionally dangerous matter. The present Boxer fuses, in which the composition is supported at the bottom, and the setting of which is effected by boring a hole into the composition at the side, were introduced in 1850, and have superseded all other time-fuses in our service.

It must have been remarked at an early period that time-fuses never could fulfil all the require-

ments of shell-fire—that it must ever be a matter of impossibility to estimate exactly the time of flight of a shell; or, knowing that, to set a fuse so as to burn to the fraction of a second required. If a shell fired against a column of men explodes just after passing over their heads, instead of in front of them—or if, when fired against buildings or cover of any kind, or against shipping, it passes through before bursting, in both cases its effect is lost. And, moreover, a shell is very liable to have the fuse extinguished or shaken out on striking a hard substance. These and similar considerations led to many contrivances for igniting the bursting charge by the shock of impact, and led to the adoption of percussion or concussion fuses, not to supersede but to supplement the action of time-fuses. The 'blind shells' of the mediæval gunners were so called because they carried no lighted fuse, but a complicated mechanism of steel rasps and flints, to strike fire within the shell when it impinged against the object aimed at. Probably these failed so frequently as to give rise to the modern application of the term to shells which fail to burst at all.

Many descriptions of percussion-fuses have been recently tried in the service, almost all of them constructed with patches of detonating composition internally, beneath which are little hammers, secured on wires, which are broken by the shock of discharge, leaving the hammers free to dash against the detonating composition when the shot strikes the object aimed at; but all will probably be superseded by the most perfect and ingenious of all fuses, the Pettman, so called after their inventor, an official in the Royal Laboratory. In these a little sphere of brass, covered with a coating of percussion-powder, which is protected with a cover of varnished silk and gut, to diminish its sensitiveness, and guard against premature explosions, is held between a little collar of brass at the top and a small dome of pure lead at the bottom. The sphere rests on the apex of this inverted lead cup or dome, and by its inertia, crushes it up on firing, being then left loose within the metal case of the fuse. The shell, on striking, dashes the sphere against the interior of the fuse, and so fires the shell.

It may be taken as granted that no particular percussion or concussion fuse will ever suffice for all the purposes of modern shell-fire. In some cases a fuse must not be too sensitive, otherwise, a shell which pitches short, and ricochets onwards, would infallibly be exploded on its first impact. The great difficulty with most fuses, particularly with those intended for the naval service, has been to procure a fuse which shall not fire the shell on a mere ricochet, but which will certainly act when the missile encounters a ship's side or similar resistance. For siege purposes, again, it will be a great object to obtain an extremely sensitive fuse, which will be safe enough to handle, and yet sensitive enough to burst a shell on the least graze of the projectile on the parapet of the enemy's works, and so scatter the fragments amongst the troops sheltered behind it. The latter has not yet been obtained.

The ammunition for small-arms seems to be rapidly approaching perfection, if it be not already everything that can be desired. The metallic cartridges now adopted possess every advantage that cartridges should have. They can be handled

with perfect safety; cannot be broken or damaged by careless handling; are impervious to damp, and give perfect results at practice.

Rockets have not realised the expectations formed of them by their inventor, Sir William Congreve. He advocated the arming of every branch of the service—cavalry, infantry, and artillery—with them, and boldly predicted that they would take the place of artillery in all operations in the field, and that in siege and naval operations they would play a leading part. At first sight, the advantages claimed for them appear overwhelming. In addition to being portable (the heaviest in use can be carried in the hand over any obstacle), they require no ponderous gun or engine of war from which to fire them; they are free from recoil, and can be fired from an ordinary ship's boat; they can be discharged by hundreds in a few minutes, while their effect on an enemy is infinitely more appalling than volleys of shot and shell, no matter how well directed. Their flight is not unseen or unheard, like that of a shot, but is marked by a streaming tail of fire, accompanied by a loud hissing roar, the terrifying effect of which is heightened by the way they dart about after first grazing. Soon after their introduction they were employed with immense effect in the attack on Boulogne, when the town was set on fire ten minutes after the rocket-firing commenced, and the enemy were panic-struck. They were used with almost equal effect at Copenhagen in the following year. At the passage of the Adour in 1812, a discharge of rockets at once checked the advance of a French column; and the service of Captain Bogue's famous rocket-troop at the battle of Leipsic contributed materially to that success. Sir Howard Douglas, quoting from Charpentier, tells an amusing story of a French veteran of twenty years' service who was nearly terrified out of his wits from having the skirts of his coat set on fire by a rocket at the former action; and every one has heard of the naval officer who, having been engaged in throwing rockets from a boat into an enemy's town, declared that if they frightened the enemy half as much as they did him and his boat's crew, their moral effect must have been tremendous! But they have not found favour with our artillerymen, owing to the irregularity of their flight.

A particular description of rocket is employed for the saving of life at sea, and the pattern introduced by the late superintendent of the Royal Laboratory is equally well adapted for throwing a line from shore to a stranded vessel, or from the ship to the shore.

The greater part of the articles made in the Royal Laboratory are specialities which do not come within the sphere of trade. Hence arises the necessity for a special government factory for their manufacture, the production of which may be kept down to a minimum in time of peace, but which can be rapidly expanded in the event of war. From the many great improvements which have been effected within the last ten years in nearly all the stores and munitions of war, it is evident that there is no lack of energy amongst those who are intrusted with their manufacture. It is no idle boast to say that we are ahead of other countries in these matters. This should suffice to quell the clamour which is occasionally raised by interested persons against the main-

tenance of government manufacturing establishments. No impartial observer will maintain that articles supplied by contract ever equal those made in the royal factories. And, on the other hand, there is ample evidence to prove that the manufacture of war material is best left in the hands of those who, from personal experience, know what is required of it, and are accustomed to its use.

BRED IN THE BONE.

CHAPTER XXIII.—THE LETTER LOCK.

ON the day that Richard left Gethin, which was itself an incident to keep the tongues of its gossips wagging for a good week, another occurrence took place in that favoured neighbourhood, and one of even more absorbing interest—the workings at Dunloppel were suspended. This, of course, was not a wholly unexpected catastrophe. The new vein, after giving an exceedingly rich yield for some months, had of late, it was whispered, evinced signs of exhaustion, although the fact was not known that for several weeks the undertaking had been carried on at a loss. Neither Trevethick nor Solomon, who were the principal proprietors, were the sort of men to play long at a losing game, or to send good money after bad; so, for the present, the pit was closed. But Solomon believed in Dunloppel; contrary to his custom, he had not disposed of a single share when the mine was at a premium, and his stake in it was very large.

Only a few minutes after Richard had departed for Plymouth with his cheque, Solomon returned to the inn with thoughtful brow.

Trevethick was moodily smoking his pipe in the porch, still balancing the rival claims of his son-in-law elect, and dissatisfied with both of them. He did not share Solomon's hopes, and he detested losing his money above everything. 'Well, you've packed off all those fellows, I hope, that have been eating me out of house and home for these three weeks!'

'I've closed the mine, if that's what you mean,' said Solomon. 'But' (he looked cautiously up at the windows of the inn, which were all open—the guests were out in search of the picturesque, and Harry was on the tower, straining her eyes after Richard) 'I want to have a word with you in private, Trevethick.'

'Come into the bar parlour, then,' grunted the landlord, for he did not much relish the idea of a confidential talk with Solomon just then, since it might have relation to a matter about which he had not fully made up his mind to give him an answer.

'Is that young painter fellow out of the way, then?' asked Solomon. 'We have never had a place to ourselves, it seems to me, since he came to Gethin.'

'Yes, yes, he's far enough off,' answered Trevethick, more peevishly than before, for Sol's remark seemed to foreshadow the very subject he would fain have avoided talking about. 'He's gone to

Plymouth, he is, and won't be back these five days.'

'Umph!' said Sol. If he had said: 'I wish he would never come back at all,' he could not have expressed his feelings more clearly.

'Well,' growled Trevethick, when they were in his sanctum, and had shut the door, 'what is it now? Bad news, of course, of some sort.'

It was a habit with Trevethick, as it is with many men of his stamp, to have a perpetual grievance against Providence—to profess themselves as never astonished at any bad turn that *It* may do them—and, besides, he was on the present occasion desirous of taking up a position of discontent beforehand, so that the expected topic might not appear to have produced it.

'No; it's good news, Trevethick,' said Solomon quietly—'the best of news, as it seems to me; and I hope to bring you over to the same opinion.'

'He's got some scheme for marrying Harry out of hand,' thought the harassed landlord. 'How the deuce shall I put him off?'

There was not the slightest excuse for doing so; if Solomon had been of a less phlegmatic disposition, he might have married her a year ago, young as she was. 'Read this,' said he, producing a letter from his pocket, 'and tell me what you think of it. It's old Stratum's report upon the mine.'

'Ay, ay,' said Trevethick, diving into his capacious pocket for his silver spectacles. As a general rule, he was wont to receive all such reports with discredit, and to throw cold-water upon Sol's more sanguine views; but it was several minutes before he could get himself into his normal state of dissatisfied depression, so much relieved was he to find that his daughter was not to be the topic of the conversation.

'Here's the plan,' continued Solomon, 'which accompanied the letter. I got it just after I dismissed the men; and, upon my life, I'd half a mind to set them on again. But I thought I'd just have a talk with you first.'

'Ay,' said Trevethick—'well?' He was quite himself again now—crafty, prudent, reticent; about as unpromising a gentleman to 'get on with,' far less get the better of in a bargain, as a Greek Jew. But Solomon was quite accustomed to him.

'Stratum feels confident about the continuation of the lode, you see; and also, that the fault is not considerable. We shall not have to sink fifty feet, he thinks, before we come on the vein again.'

'He *thinks*,' said Trevethick contemptuously. 'Is he ready to sink his own money in it?'

'It's no good asking him that,' said Solomon coolly, 'because he's got none. But I have always found Stratum pretty correct in his judgment; and as for me, I believe in Dunloppe. The question is: Shall I go on with it single-handed, or will you go shares?'

'If it's so good a thing, why not keep it yourself, Sol?'

'Because my money is particularly well laid out at present, and I don't want to shift it.'

'That's just the case with mine,' said Trevethick, from behind the plan.

'I thought you might have five hundred pounds or so lying idle, that's all,' returned the other. 'I'd give six per cent. for it just now.'

'Oh, that's another thing. Perhaps I have; I'll see about it.'

'If you could get it me at once, that would be half the battle,' urged Solomon. 'There are some good men at the mine whom I should not like to lose. If I could send round to-night to tell them not to engage themselves elsewhere, since they're opening so many new pits just now, that would be a relief to my mind.'

'Very good; you may do that, then. I'll write for the money to-morrow.'

So blunt, straightforward, and exceedingly unpleasant a man as John Trevethick was, ought to have been the very incarnation of Truth, whereas that last observation of his was, to say the least of it, jesuitical. There was no occasion to write to anybody for what he had got above-stairs, locked up in his private strong-box. But he did not wish all the world to know that, nor even his *alter ego*, Solomon Coe.

Trevethick, although a close-fisted fellow, was no miser in the vulgar sense. He kept this vast sum at hand, partly because he had no confidence in ordinary securities, and partly because he wished to be in a position, at a moment's notice, to accomplish his darling scheme. If Carew should happen to change his mind, it would be because he was in want of ready money, and he would be in mad haste to get it. His impatience on such occasions brooked no delay on the score of advantage; and the man that could offer him what he wanted, as it were, in his open hand, would be the financier he would favour, in preference to a much less grasping accommodator, who might keep him waiting for a week. It was not so much the tempting bait of ready money that caught the Squire, as the fact of his wishes being obeyed upon the instant. He had not been used to wait, and his pride revolted against it; and many a time had a usurer missed his mark by not understanding with how great a bashaw he had to deal in the person of Carew of Crompton. Trevethick was aware of this, and indeed the chaplain had given him a hint to keep the proposed purchase-money within easy reach, in case the Squire's mood might alter, or his necessities demand his consent to what Mr Whymper honestly believed to be a very advantageous offer. Otherwise, Trevethick was not one to keep a hoard in his house for the mere pleasure of gloating over it. He had not looked into his strong-box for months, nor would he have done so now, but for this unexpected demand upon it. It was safe enough, he knew, in his daughter's room; and as for its having been opened, that was an impossibility; the padlock hung in front of it as usual, and it would have taken a man half a lifetime to have hit upon its open sesame by trial. He was justly proud of that letter lock, which was his own contrivance, invented when he was quite a young man, and had been perforce compelled to turn his attention to mechanics, and he considered it a marvel of skill. It was characteristic in him that he had never revealed its secret even to his daughter. Indeed, with the exception of Harry, nobody at Gethin—save, perhaps, Hannah, when she dusted her young mistress's room—had ever

set eyes upon it, nor, if they had, would they have understood its meaning.

It was therefore without the slightest suspicion of its having been tampered with, that, an hour or two after the conversation just narrated, Trevethick repaired to his strong-box with the intention of taking from it the sum of money required by Solomon. The padlock was like a little clock, except that it had the letters of the alphabet round its face instead of figures, and three hands instead of two; this latter circumstance insured, by its complication, the safety of the treasure, but at the same time rendered it useless—unless he broke the box open—to the possessor himself, if, by any accident, he should forget the letter-time at which he had set it; and accordingly Trevethick was accustomed to carry a memorandum of this about with him; even if he lost it, it would be no great matter, for what meaning would it convey to any human being to find a bit of paper with the letters B, N, Z upon it? Harry, as we have said, was out of the house, so his daughter's room was untenanted. He went to a cupboard, and took down the box from its usual shelf, with the same feeling of satisfaction that an old poet recurs to his first volume of verse; he may have written better things, and things that have brought him more money, but those spring leaves are dearest to him of all. So it was with Trevethick's spring lock. He adjusted the hands, and the padlock sprang open; he lifted the lid, and the box was empty; the two thousand pounds in Bank of England notes were gone!

He was a big bull-necked man, of what is called (in the reports of inquests) 'a full habit of body,' and the discovery was almost fatal to him. His face grew purple, the veins in his forehead stood out, and his well-seasoned head, which liquor could so little affect, went round and round with him, and sang like a humming-top. He was on the very brink of a fit, which might have 'annihilated space and time' (as far as he was concerned), 'and made two lovers happy.' But the star of Richard Yorke was not in the ascendant. The old man held on by the shelf of the cupboard, and gradually came to himself. He did not even then comprehend the whole gravity of the position; the sense of his great loss—not only of so much wealth, but of that which he had secured with such toil, and laid by unproductively so long for the accomplishment of his darling purpose—monopolised his mind. Who could have been the thief? was the one question with which he concerned himself, and the answer was not long delayed. It was the coincidence of amount in the sum stolen with that which Richard had gone to Plymouth to realise, that turned his suspicions upon the young artist. Why, the scoundrel had fixed upon that very sum as the test of his possessing an independence, for a reason that was now clear enough: it was the exact limit of what he knew he could lay his hand upon. But how did he know?—or, rather (for the old man's thoughts were still fixed upon the mechanical mystery of his loss), how did he open the padlock? Then there flashed upon his mind that incident of his having dropped the memorandum out of his watch-case in the bar parlour in Richard's presence, and the whole affair seemed as clear as day. It was Richard's intention to change the notes at Plymouth for the paper of the miners' bank, or for gold, and then to exhibit

it to him in its new form as his own property. He did not believe that the young artist intended to steal it; but he was by no means less furious with him upon that account—quite otherwise. He piqued himself upon his caution and longheadedness, and resented every deception practised upon him, even more than an injury. Moreover, he felt that but for Solomon's unexpected request for the loan, the plan would have succeeded. In all probability, he would not have discovered his loss until it had been too late: he would not have known how to refuse the young man leave to become his daughter's suitor; and once his son-in-law, he could scarcely have prosecuted him for replacing two thousand pounds' worth of bank-notes in his strong-box by notes of another kind. Exasperated beyond all measure as Trevethick was, it did credit to his sagacity that even at such a moment he did not conceive of Richard Yorke as being a common thief. But he concluded him to be much worse, and deserving of far heavier punishment, as a man that would have obtained his daughter under false pretences. He went down stairs, taking the box with him, to seek his friend. Solomon had just returned from the cottage over the way, where he had been giving orders to one of the best miners to still hold himself engaged at Dunloppel, and had bidden him tell others the same. He was in high spirits, and was twirling about in his large hands Mr Stratum's diagnosis of the mine.

'You may put that away and have done with it,' said Trevethick hoarsely: 'I have no money to lend you for that, nor nothing else. This box held two thousand pounds of mine, but it's all gone now.'

'Two thousand pounds!' exclaimed Solomon, too amazed at the magnitude of the sum to realise what had happened to it. 'Two thousand pounds in a box!' He had always suspected that the old man kept something in a stocking-foot, and had often rallied him upon his unnecessary caution with respect to investments; but this statement of his appeared incredible.

'What does it matter if it was twenty thousand, when I tell you it's gone,' said Trevethick sullenly. 'That limb of the devil, Yorke, is off with every shilling of it.'

'Do you mean to say he's stolen it?' inquired the other, even more astonished than before.

'He's taken it to Plymouth with him, that's all.'

Solomon Coe was a man of action, and prompt in emergencies, but for the moment he was fairly staggered. He had no liking for Richard, but such a charge as this appeared incredible; it seemed more likely that the old man had repented of his late offer of the loan of five hundred pounds, and had invented this monstrous fiction to excuse himself.

'Where was the box kept?' asked Solomon drily.

For a moment or two Trevethick was silent. 'It is as I suspected,' thought the other; 'the old man is making up the story as he goes on.'

But the fact was that this question had gone to the very root of the matter, and opened Trevethick's dull eyes wide. In his chagrin at his loss (though he did believe it would be temporary), and irritation at his sagacity having been set at naught, he had overlooked the most serious feature of the

whole catastrophe. How had Yorke come to the knowledge that the strong-box was kept in Harry's room? and under what circumstances had he obtained access to it?

'Where's Harry?' exclaimed Trevethick, starting up, with a great oath; for it flashed upon him that she had fled with Richard. 'Where's my daughter?'

'I saw her in the village just now,' said Solomon, 'talking to old Madge. She had been for a stroll out Turlock way, she said. But what's the use of vexing her about the matter? Women are much best kept in the dark, when one don't want things to be talked about. The more quiet you keep this story, the more chance you'll have of getting your money back, you may depend upon it.—It was in notes, of course?'

'Yes, in notes,' answered the other, with a vacant look, and drumming on the table with his right hand.

'Come, come, Trevethick, you must keep your head,' remonstrated Solomon. 'I'll act for you quick enough, if you'll only supply me with the means. It's a great loss, but it should not paralyse a man. You've got a memorandum of the numbers of the notes?'

'Yes, yes; I have somewhere.'

'Well, go and fetch it, while I order out a horse. I can get to Plymouth before wheels can do it, and shall catch this scoundrel yet. He'll be going there to change the notes, I reckon?'

'Yes, yes,' said Trevethick; 'he'll be at the *George and Vulture*: so he said.'

'Good,' replied Solomon. 'I'll get a warrant from old Justice Smallgood on my way.—Rouse up, man, rouse up; you shall have your money back, I tell you, and see this rascal lagged for life into the bargain.'

'If I could only get him hanged!' answered the old man fiercely.—'if I could only get him hanged, Sol, I'd let the money go, and welcome!'

Solomon stared after him as he left the room and tramped up-stairs in search of the list of notes, with a ludicrous expression of wonder. In his eyes, no revenge at present seemed worth so extravagant a price. But Trevethick had his reasons, or thought he had, for this excess of hate; his slow-moving yet powerful nature resembled the python—it was exceedingly tenacious when its object was once grasped, and it was apt to glut itself.

CHAPTER XXIV.—A HARD ALTERNATIVE.

Solomon had ridden off, and was half-way to Turlock before Trevethick felt himself sufficiently collected to summon Hannah, and bid her send for her young mistress. He could not go in search of her himself, and speak what he had to ask: no bird of the air must carry her reply, no wind of heaven breathe it, if it was such as he feared. There must be no 'scene' in public to let loose the gossips' tongues. He sat in the bar parlour with his huge head leaning on his hands, brooding over his wrongs, and waiting for her—for the daughter by whose wicked connivance, as he thought, he had been despoiled of his hard-earned gains. He did not reproach himself for having thrown her so much with Richard, in order that the latter might be kept in good humour, and apt to forward his plans as to Wheel Danes. He 'wondered at their vice, and not his folly.' As to there being anything beyond

a flirtation between the young people, he did not suspect it; but even as matters were, he was bitterly enraged against Harry, and would have strangled Richard out of hand, if he could have got near him. It was evident to him that this fellow had been courting his daughter, though he knew she was pledged to another, and had wormed out of her the secret of his hoarded wealth. Six months ago, she would not for her life have dared to tell what she knew he wished to hide; and now this young villain had wound himself so cunningly about her, that she had no will but his, and had even helped him to rob her own flesh and blood. His heel was on that serpent's head, however, or would be in a day or two, and then—The old man ground his teeth as though his enemy were between them.

'Well, father, here I am; Hannah said you wanted me.'

Harry's voice was as calm as she could make it, but her young limbs trembled, and her face was very pale.

'Come here—nearer!' cried Trevethick hoarsely, seizing her by the wrist. 'Do you know that you are the only creature but two—but one, I may say, for gratitude ain't love—that I have ever loved in this world—that I have worked for you, planned for you, and for you only, all my life?'

'Yes, father; and I am very grateful for it,' answered she submissively.

'No doubt,' sneered the old man; 'and the way you shew how much you feel it, the way you shew your duty and your love to your father in return, is to put a thief—a lying, cheating thief—in the road to rob him!'

'You must be mad, father!' exclaimed Harry in blank amazement. 'I know no thief!'

'You know Richard Yorke, you wicked wanton wench!' interrupted Trevethick passionately. 'And how could he have heard of that box, except through you! Of course, you'll lie; a lie or two is nothing to one like you. But here's the proof. The padlock has been opened, the money taken. Who did it? Who could have done it, except him, or you?'

'As I am a living woman, father, as I hope for heaven,' answered Harry earnestly, 'I did not do it, and I do not know who did!'

'You didn't, and you don't! The thing's incredible. Reach here that Bible.' He still held her by the wrist. 'You shall swear that, and be damned for ever! What! you never told that villain where my money lay?'

'I did tell Mr Yorke that, father.—Pray, pray, be patient. It was long ago: we were talking together about I know not what, and it slipped from me that you kept money in a strong-box. That was all.'

'All!' said the old man bitterly, and flinging her arm away from him, the wrist all black and bruised with his angry clutch. 'What more, or worse, could you have told than the one secret I had bid you keep? You told him the exact sum, too, I'll warrant? Two thousand pounds!'

'Yes, father, I did. It was very wrong, and I was very sorry, directly I had done it. But I knew the secret would be safe with a gentleman like Mr Yorke.'

'A gentleman! A cheat, an impostor, a common rogue!'

'O no, O no, father!'

'But I say "yes." To-morrow, he will have the

handcuffs on him!—What! Have you tears for him, and none for me, you slut! Perhaps you *shewed* him where the box was kept, as well as told him! Did you, *did* you?

There was something in Harry's frightened face that made her father rise and lock the door.

'Speak low!' said he, in an awful voice; 'you have something to tell me. Tell it.'

'Only, that I love him, father—oh, so much,' pleaded Harry passionately. 'Indeed, indeed, I could not help it! I tried to love Sol, because you wished it, but it was no use; I felt that, even before Richard came. We walked every day together for weeks and weeks, and he was so different from Sol, so bright and pleasant, and he loved me from the first, he said. He told me, too, that you had listened with favour to his suit, or, at all events, had not refused to listen—that there was good hope of your consenting to it, and without that hope he knew he could not win me. I only promised to be his on that condition. Speak to me, father; pardon me, father! Don't look at me so. He never meant to thief, I am sure of that. You asked of him some warrant of his wealth, some proof that he could afford to marry me. You would not have done that had you set your face utterly against him. And I think—I fear—though Heaven is my witness that I knew nothing of it until now, that he took this money only to bring it back to you again, and win your favour. It was an ill deed, if he has really done it, which even yet I do not credit; but it was done for my sake; then for *my* sake, father, pity him, pardon him!' She had thrown herself upon her knees beside the old man's chair; her long hair had come unfastened, and trailed upon the sanded floor; her hands were clasped in an agony of supplication. No pictured Magdalen ever looked more wretched or more beautiful.

'You have more to tell?' said the old man harshly.

She shook her head, and uttered a plaintive moan.

'Then I have,' continued he. 'You say you love this man; now I hate him! I do not regret that he has robbed me, since, by that act, he has placed himself in my power, and I mean to use it to the uttermost; but for his cozening me to my face, as he has done so long, and for his smooth false ways, and for his impudent tales, which I had half-believed, and for his audacious attempt to pluck you from the hand for which I had designed you, I *hate* him. I tell you,' cried out the old man fiercely, 'if this villain had fifty lives, and the law would help me to them, I would exact them all! If he stood here, I would brain him with yonder staff; and if my curse could follow him beyond the grave—as my vengeance shall to the grave's brink—he should perish in eternal fire! *Hate* him? I almost hate you for having loved him; and if I thought you would dare to cross me further by holding to him now, I'd drive you from my door this very hour. You will never see him more; but I shall, once. This mouth shall witness against him to the uttermost; these ears shall hear the judge pronounce on him his righteous doom.'

'No, no,' gasped the young girl faintly. 'If you do not hate me yet, I pray you to unsay those words. When you curse Richard, father, you are cursing you know not whom.' She dragged upon

his arm, and brought his ear down to the level of her mouth, and whispered in it.

The old man started to his feet, and pushed her from him with a hideous oath; then made as though he would have unlocked the door and thrown it wide, to drive her, as he had so lately threatened, from his roof. But there was a noise of many feet and chattering and laughter in the passage without, which shewed that some of the tourist guests had just come in. Only a plank intervened between that little knot of giddy pleasure-seekers, with their jokes and small talk, and the father and daughter in their agony.

'Mercy, mercy!' cried the wretched girl. Trevethick clapped his hand upon her little mouth, with 'Hush, fool! hush!' and she felt thankful that he called her by no worse name.

'Forgive me—pity—pardon,' murmured she.

'Listen!' said he, in a stern whisper. 'Obey me now, you wicked wanton slut, or I proclaim your shame before them all; one minute will decide your fate! Be stubborn, and you shall go forth through that door, discarded, friendless, infamous, to beg your bread, and win it how you will; be tractable, and even yet you shall have a father and a home. Make choice, and quickly; and having made it, be you sure of this, that it shall hold. Do you hear me, trollop?'

'I hear, I hear!' she murmured, shuddering. 'I will obey you now, and ever.'

'Then marry Solomon Coe—at once—within the month.'

'O father, mercy!'

His fingers were on the door, and the key grated in the lock.

'This sea-air makes one famish,' said a gay voice outside.

'It's lucky,' laughed another, 'for there is sure to be nothing for dinner but the inevitable ham and eggs.'

In another instant the final barrier between herself and public shame would have been withdrawn by that relentless hand.

'I promise—I promise—spare me!' cried the unhappy girl, and fell fainting on the floor.

The old man drew a long deep breath, and wiped his forehead. His victory had not been lightly won. He lifted his daughter up, and carried her to the sofa; then raised the little clumsy window, rarely opened, and propped it with a stick, so that the breeze might blow upon her tear-stained cheek. How white and worn and emptied of all joy it looked! As he gazed upon her, a touch of pity stole into her father's face. He poured out a little spirits in a glass, and put it to her lips.

'Take a sup of this, and you'll be better, child.'

She opened her heavy eyes, and shook her head.

'You said you would have mercy, father, if I promised?'

'Yes, yes; all shall be forgotten. We will not even speak of it to one another.'

'And you will pardon *him*? You will not hurt my Richard?'

'Your Richard!'

'Yes, for he was mine once. You will not bear witness against him before the judge? Is he not punished enough in losing me? Am I not punished?'

'Silence!' exclaimed the old man, in a terrible voice. His hand, trembling with passion, had struck against the strong-box, and at its touch his

wrath broke out in flame. 'That man is dead to you henceforth! You gave your promise without conditions. Moreover, his fate is in the hands of the law, and not in mine.'

ANACHRONISMS OF ARTISTS.

THE anachronisms of painters and sculptors must be divided into those which are purely unconscious, and those which are conscious and deliberate. The latter have their root in the fashion and prejudice of the age or the school of the anachronist. Thus, the neo-classical artists of the renaissance and of the eighteenth century, and the neo-medieval painters of the modern German art-colony in Rome and of England, opposed as they are to each other, agree in a common disrespect for their own age, and in a common taste for reproducing the characteristic of their ideal epochs. Think of Dr Johnson as he stands represented in St Paul's Cathedral. His brawny arms, broad chest, and herculean legs are naked; he has no shoes on his feet! He has apparently got out of bed in the middle of the night, merely throwing a blanket around him, to keep out the cold. It must have been after some indulgence in such an attitude and such a dress as this (for the statue represents nothing else that he ever did or said), that he was compelled to write the lines—

But me, alas! to beds of pain
Arthritic tyranny confines!

The only way by which the sculptor could redeem such a statue of an eighteenth-century scholar from anachronism would be to carve a folded coat, waistcoat, and breeches as a cushion for his elbow on the pillar upon which he is leaning.

The painters have been always the first to disentangle themselves from the bonds of a technical anachronism. The fact that they have the service of colour as well as of form at their beck makes it comparatively easy for them to do; but the sculptor, who has only form and light and shade (for colour, if he had it, would in this case give him no help), is still unwilling to give up the dignified vestments of the Greek and Roman. He can indeed use with satisfaction any kind of male or female dress which arranges itself into long and flowing lines, or which reveals the human figure, and affords occasion for exhibiting good anatomy. The modern dresses of Western Europe must be of necessity a perpetual torment to him. Long-lined dresses are eschewed, on account of the dirty streets and muddy roads through which the wearers have to drag them, and the *impedimenta* which they prove to that quick progress which civilised life demands from every one. The priest first tucked up his cassock, then permanently shortened it, and at last restricted it to the peg in the vestry. The undergraduate and the lawyer cast off their gowns the moment they are off duty. The trouser (invented, as old gentlemen of our younger days used to say, to hide bandy legs) has cruelly robbed the sculptor of that anatomical outline of the leg which the breeches of the past generation still permitted him to render. At the present day, if he is to be free from all anachronism, he must represent his hero, so far as costume is concerned, as a well-made tailor's block. He is driven to put what genius he has into the

face, the hands, and the poise and attitude of his subject. It is well for him, indeed, if his subject be a judge, or a mayor, or a peer, or a Knight of the Garter, or any other occasional wearer of a long and flowing robe.

A pictorial anachronism was inoffensive to the eye and the mind of its observer in the middle ages. The heroes and heroines of Holy Scripture and of hagiology were, of course, represented in the dress which the artist saw daily before his eyes in church, or hall, or court-yard, or market-place. This, at least, was one way of suggesting to the beholders that the patriarchs and apostles were men like themselves, of like passions and temptations. The changes of fashion were slower than they are now. Travel into Scripture lands was not followed by the publication of illustrated books, and the travellers had not the sense we have of the unchanging character of manners and fashion in the East. It was indeed the sense of a most tremendous change, a kind of upheaving of the whole past, which first carried Western Christians in great multitudes to the East: the East, the home of the Faith, had become Infidel. The Crusaders saw the life of the biblical lands daily before them in all its conservative completeness; but they would hardly desire to see that life pictorially reproduced in their books of devotion and their church pictures. The East had become, to their mind, alien from the God of the Bible and the old saints of the Bible; and it would have seemed theologically false, and a kind of pictorial denial of the faith once delivered to the saints, to represent Joshua and Gideon as Saracen knights, or Abraham and Jacob as miscreant (that is, Mohammedan) sheiks. Joshua and Gideon were enemies of God's enemies, and could therefore only be truly represented by a devout painter in the forms of true Christian knights. For the same reason, a Jewish priest is habited as a Christian priest, and the Jewish high-priest as a Christian bishop. The similarity between the pictures of Annas or Caiaphas and the living bishops whom the people saw in their churches, led to the interchange of the terms 'chief-priest' and 'bishop' in the miracle-plays: the soldiers who seize our Lord in the garden, and drag him before Annas and Caiaphas, always address the two high-priests 'Sir Bushoppes;' and in the rubric, or stage direction, they are also called 'the bishops.' The successors of Aaron and the Christian bishops are identical in appearance. Even so far back as Eli, the old high-priest is represented wearing an episcopal mitre, cope, and gloves, in a picture of the dedication of the child Samuel in Mr Boxall's *Speculum*.

The want of travel, or the want of any other than verbal pictures from those who had travelled, was a cause of many anachronisms. If a city was mentioned in Holy Scripture, and the painter had to represent any part of it, he would put into his background a faithful photograph of whatever city he knew best. This anachronism has proved of some value to us, as M. Haussmann has shewn in his great folios on the history of Paris, who gives copies of French illuminations of the fourteenth and fifteenth centuries in which Paris does duty for Jerusalem. There is a miniature of the shepherds receiving the tidings of the birth of Christ, in which the Seine, the tower of the Temple, the Church of St Jean-en-Grève, and the Petit Châtelet are translated into Judea. The early monastic

artist would read in the book of Genesis that Rebekah came from Padan-aram on a camel, and alighted from the camel's back the moment she saw Isaac. This meeting has always been a favourite subject with artists. But what is a camel? the monastic painter asked himself. He had never seen one, nor even a picture of one. He gathered from the Bible that it was a beast of burden, and so took as his model for the unknown beast the horse or the ass, which were the only beasts of burden he had ever seen. It was at least a safer plan than that of Mr Longfellow's German, who, when he had to write a description of a camel, having never seen one, sat down to evolve the idea out of the depths of his consciousness. So we have illuminations of Isaac hurrying to help down Rebekah from her horse or her donkey.

The mediæval artists were far more studious and conscientious than we generally think them, for we look superficially upon their quaint mistakes. The means of knowing truth from falsehood which are open to us were closed to them, but they often sought hard for science and knowledge, and used whatever they found. Their odd conscientiousness is sometimes evidenced in the comical literalness of their conceptions. A modern caricaturist has made 'Britannia rule the waves' with a pencil and ruler; and this is hardly less absurd than some of the representations made by the monastic artists in all seriousness. To picture the blessing of the seventh day, they make six figures stand in front of the Almighty, while a seventh stoops down and receives a sacerdotal benediction (such as the painter saw given from the church altar) from the Creator's uplifted hand. To illustrate the moving of the Spirit 'upon the face of the waters,' the sea is actually drawn as a great human face, the waves forming its far-flowing hair and its beard. That we may understand the charge of the Creator to the first man, to 'dress the garden and keep it' (*custodiret* in the Vulgate, which was of course the only text-book of these artists), they shew us a picture of our Saviour handing to Adam a well-made spade and—a bunch of keys!

In all these absurdities there is an innocent conscientiousness. They wished their pictures to convey the truth, and to be exact representatives to the eye of the thought which the Scripture conveyed by words to the ear. This conscientiousness began later to shew itself in the gradual adoption of such historical truth as opened before the artist through travel, or through ancient monuments, or through a more critical study of the Bible text, until we find no more Moabites, Jews, or Romans dressed like Italians or Germans of the middle ages. It is easy to trace the development of the honest attempt of artists to synchronise their pictures; the first germ of a scientific historical art is shewn by adoption of costume and scenery which do not appear in the traditional models. Herod the Great had a body-guard, they hear, of Gauls and Germans: on Trajan's Column, the Italian painters at least had some means of knowing how Gallic and Dacian soldiers were clothed; accordingly, in a picture of the 'Massacre of the Innocents,' we find the murdering soldiery are dressed after these old bas-reliefs. In others, Herod as a Paynim king, is turbaned like a Turk. Angelico da Fiesole clothes Herod as a Christian king of the middle ages, while his soldiers are

habited after the antique Roman model. Giorgione, recognising in the Egypt of his own day a Mohammedan nation, has (in his 'Choice of Moses') dressed Pharaoh and his counsellors like Turks; all are turbaned, though their physiognomy is too western to harmonise with their costume. In a picture seen by Captain Burton in the cathedral of Goa, Pontius Pilate, although an undoubted Roman, wears a huge Turkish turban.

In a 'Nebuchadnezzar's Dream' of a Speculum of the fifteenth century, the king is lying in bed with his crown on—enough to make any man dream. The anachronism is double; for, first, no king ever yet put on such a hard unwieldy night-cap before going to sleep; and secondly, no king of Babylon slept in a mediæval bedstead under a load of bed-clothes. But we see at once why the artist painted the crown; any contemporary might otherwise have taken it for a picture of a nobleman of his own age in bed, as fit for a book of romances as for a Speculum of salvation; especially as the dream-man hacking at the dream-tree, which is disturbing the sleeper's mind, is a husbandman of the fifteenth century.

Albert Dürer's woodcuts of the Passion have been so widely popularised by copies that we only remind the reader that in them the Roman soldiers of Pilate are dressed like soldiers of the Holy Roman Empire, in the same costume as Retzsch adopted for Faust, Mephistopheles, and the German gentleman in his clever but mannered outlines, which Mr Selous has also, for some unknown reason, adopted as the proper dress of Christian and Faithful in the *Pilgrim's Progress*. Dürer saw imperial soldiers every day; they called the emperor they served the successor of Tiberius, and this was the dress they wore. The anachronism of the mediæval painters offends us the less, because they always give beauty, or dignity, or delicacy to the sacred characters. If they are copies of the persons about them, they are wonderfully refined and de-sensualised copies. In the earliest and the most ill-drawn, there is little to disgust the pious beholder, or to degrade the subject. The same cannot be said of the Dutch and Flemish painters. They, too, outrageously anachronise Holy Writ; but the stout and sprawling dames of Rubens, and the coarse boors of Rembrandt, have not the slightest ideal affinity with the chaste and dignified saints they are meant to represent. Goethe has admirably said, that if Raphael were to paint peasants in an inn, he could not help making them look like apostles; while Teniers could not prevent the persons he would paint for apostles from being taken for Dutch peasants. The fashionable realist may say that Teniers is probably nearer to the truth, and that his peasants may be something like the actual apostles; but we should nearly all say these drinking Dutch look very 'un-apostolical'; those dignified and thoughtful men look 'apostolical.' Our patience or impatience at any manifest anachronism depends upon its moral and intellectual spirit. Mrs Jameson tells us that she has seen a clever picture by an unknown painter of the P. Veronese school in which Isaac is represented as a gay Venetian cavalier. Can one imagine a grosser parody upon the most peaceful and quiet of the patriarchs, the meditative and retiring young man who went out to meditate in the fields at eventide! An earlier painter, though he would have made Isaac's dress

equally anachronistic, would shock us less, for he would have drawn the spirit of his subject from the study of the book of Genesis.

Not the least astonishing anachronism in the medieval painters is the perfection which they attribute to the mechanical arts at a very early period. The handsome spade and the bunch of keys which we have seen our Lord presenting to Adam, must, we conclude, have been manufactured by angels. It may be that the presentation is a painted sermon, preaching that the origin of human arts is from God; but it is curious that the angels should have anticipated the shape of spades and the pattern of keys in medieval Europe. Adam's spade, however, is nothing of a wonder when it is compared with his household furniture and his baronial castle, for the illuminators enrich him with both. I have seen a settee with turned columns, excellent carving, and decorated earthenware tiles, upon which Adam and Eve sat down, side by side, to weep over the dead body of Abel. What loom wove, and what tailor shaped and sewed, their long and beautifully made garments? In Raphael's picture of the 'First Family,' familiar through its many copies, Adam holds a kind of rude adze: the painter recognises no flint period, for its head is plainly of metal. The glorious meditative fallen Adam of Milan Cathedral is more fitly holding a stone-headed adze. In the pictures of the Eastern churches, Cain is slaying Abel with a dagger; in the West, his weapon of murder is usually a club; sometimes, however (perhaps with a reference to the proto-martyr of the New Testament), he is painted in the act of stoning his brother to death. Cain and Abel are generally well-dressed men in early illuminations. Lady Eastlake gives the copy of a picture in which Adam's elaborate Gothic castle or mansion forms the background to the figures of the two brothers.

A common instance of anachronism with a purpose is to be seen in many pictures of St Jerome. The great Latin Father is generally painted reading or praying in his cave, the skin of some beast his only clothing; but in some corner of the cell, in odd contrast to the general wildness of the picture, we discern the well-made red hat of a cardinal. Such a hat was never seen in this world until St Jerome had been dead at least eight centuries; and it is needless to say that he was a very different cardinal from Cardinal Wolsey, or Cardinal Richelieu, or Cardinal Antonelli. The ascetic doctor would have thought it a sin to put such a gay tasselled thing upon his head, and the untaught might be excused for supposing that it represents those pomps and vanities of the world which he has renounced. Hartley Coleridge discovered a moral purpose in the anachronistic representation of early persecutors as Spanish bishops and inquisitors in the pictures in Foxe's *Book of Martyrs*.* I have seen some of the Abyssinian church offices brought home by our soldiers after the war; they contain the most curious anachronisms. St John the Evangelist is figured (as Mr Curzon long ago described in his *Visit to the Monasteries of the Levant*, in some of which Mr Tozer found Abyssinian monks in his

recent visit) with woolly hair; and he even bears on each side of his face the two indelible gashes, with which the Gallas mark their faces, hearts, and arms. Long before the Abyssinian war broke out, in his first edition of his *Wanderings amongst the Falashas*, Mr Stern described the famous picture of the 'Passage of the Red Sea' in the Church Kudus Yohannes, in which the children of Israel wear the British uniform and carry muskets on their shoulders! The church was indebted for this picture to a gentleman who accompanied the mission of Captain Harris to the court of Shoa; but whether this amateur painter committed the anachronism out of ignorance or out of mischievous impudence, does not appear.

THE MARLOW INSTITUTION.

IN SEVEN CHAPTERS.—CHAPTER I.

MR MARLOW's funeral was about the finest piece of Undertaking ever seen in Steddington. On account of certain munificent benefactions to his native town, duly particularised in his last will and testament, the borough council had unanimously voted him a public funeral—at the expense of his own estate. To prevent trade jealousies, and to insure the thing being well done, the funeral arrangements were confided to a committee consisting of all the undertakers in the town. Expense was no object, for the estate was a very fat one. Business was entirely suspended; a general holiday being given, that all classes might have an opportunity of paying the last sad tribute of respect to the beneficent dead; and not without reason, for, to tell the truth, in the matter of respect to Mr Marlow, the Steddington people were sadly in arrear. They had never paid him much tribute of this sort during his lifetime. He had, in fact, been always regarded as a close-fisted, mean, stingy old wretch, whose money never did him any good, nor any one else either; and his bequest took everybody by surprise, not only with regard to its unexpectedness, but its amount. It was eighty thousand pounds odd in the Three per Cents.

Poor old Marlow, who never in all his life was known to have ridden in anything more expensive than a threepenny 'bus, was taken to his grave in a hearse and six horses, almost hidden with plumes and feathers and velvet trappings. There never was such a day for mutes; every mute in the town was engaged, besides a good many other persons, who, being voters and supporters of the ruling party in the council, had a muffled banner, a suit of black, and a day's pay presented to them, in recognition of their vote and interest on other occasions. All the private carriages and all the cabs in Steddington followed in the procession, while the Workhouse children and Ragged School boys brought up the rear. The procession must have been a mile long. The mayor and corporation rode in the mourning-coaches next but one to the hearse as mourners. There was only one chief-mourner, and he had the coach immediately preceding all to himself; that was Richard Marlow, only

* In a picture of the Martyrdom of St Lawrence, which is dated 258 A.D., in the reign of the Emperor Valerian, a Spanish bishop is presiding as chief persecutor.

son, and indeed only near relative, of the deceased. And cause enough *he* had to mourn, poor fellow. The last words he had spoken with his father had been angry ones; and his name was not even mentioned in the will! The mayor and corporation for the time being of Steddington were sole heirs, executors, administrators, assigns, and residuary legatees of all the property whereof Joseph Marlow died possessed; and it was all to be devoted to founding and endowing 'The Marlow Institution,' for the encouragement of the arts and sciences, especially philosophy, navigation, and astronomy; its benefits to be enjoyed for ever by 'the select scientific public' of the borough of Steddington.

They buried Joseph Marlow 'in sure and certain hope' (but feeble expectation) of meeting him again. A most imposing service was made of it, notwithstanding deceased had never been a church-going man, and, among his other eccentricities, would never speak to a parson if he could help it. Several funeral orations were made over the grave, extolling Mr Marlow's munificent liberality, his quiet, unobtrusive life, and discovering such virtues in his very vices as would have surprised the deceased himself. On returning from their sad duties, the town council sat down to a magnificent cold collation, to which great numbers of the townspeople were invited. They drank in solemn silence to the memory of their departed friend and benefactor, and the toast was honoured appropriately enough in bumpers of the Widow's Wine—*La Veuve Clicquot*. But gradually as the toasts went round the guests felt less disposition to look only at the sad side of the picture, and the proceedings became more animated in view of the task still remaining to perform. There was eighty thousand pounds to spend. The chairman compared their departed friend's life to that of the busy bee who painfully lays up honey all its little life in order to accumulate a store worthy to be presented to the enjoyment of mankind; and a councillor with a very red nose remarked in a devout tone of voice, and with a deep sigh: 'My frens—shquite true—hish loshis—our gain.'

An immense marble monument was erected over Joseph Marlow's grave. Of no particular style of architecture, it was nevertheless very fine, not to say showy. It was imposing in many senses, especially in that of imposing on the Steddington mind that it was as tasteful as it was expensive. Inscribed on its sides were so many virtues, they must have been collected one by one from all the other humble grave-mounds in the same cemetery, which have neither name nor date to tell who lies beneath—only a number in the secretary's book. That the virtues alluded to were the common and joint property of some of the dead in that cemetery, there is no doubt. They won't be missed; they may as well be described collectively on one man's tombstone as not. The little ash-heaps of the great always appear to impress the public mind with the notion, 'Rubbish may be shot here'—at least, one would suppose so, from the quantity there deposited.

CHAPTER II.

Having described how Joseph Marlow was buried, it behoves me to describe the manner of his death, and thereto hangs my tale. Now, the hero of this

narrative being no other than old Joseph Marlow himself, I am aware it looks rather strange to have commenced with his burial. I have my own reasons for beginning backwards—reasons I don't care to disclose on this page, but will merely offer as excuse, that all I know of Mr Marlow was learned subsequent to his burial. Nobody in Steddington knew or cared much about the old gentleman till he *was* buried; but, after his legacy had made him famous, we all began to fish out what we could of his antecedents; so that, in fact, I give the story in the same order of time as I gathered it.

His house is (was, rather) at the bottom of our High Street, on the left-hand side going down, and was one of the few then remaining which had not been modernised and turned into a shop—an old-fashioned house, although its front was stuccoed over, and the plaster had acquired a wretched, dirty, greenish appearance, from the perpetual drip of six stunted pollard elms which stood in the six-foot space between it and the iron palings, marking its frontage against the pavement. These trees made the house very dark all the summer; and in the winter, when it was wet, their stems would present a most abject and soppy appearance—wetter and drearier to contemplate than anything I know of, except Mr Marlow's green umbrella.

Joseph Marlow was not unlike his house. He was old-fashioned, and apparently as much out of his element among the Steddington people as his house was in their High Street. The only bit of stucco about him was his brown wig, but that was such an obviously artificial affair it could deceive no one. A dreary, silent man, with very little interest for anything else than his books and his studies. That he was a student, there can be no doubt, from his habits, and also from the nature of the books and scientific instruments forming part of his bequest; but he seems to have studied in a simply selfish way, for no one else was made the wiser by what he knew; indeed, from a description of his character by one who knew him best, it is exceedingly doubtful if he ever was either. He did his own shopping, accompanied (always) by a basket and an umbrella, seldom dealt twice consecutively at the same shop, and always appeared to think he was being taken in. Butchers hated him, for he would go and turn over their pieces of meat with finger and thumb, making disparaging remarks, and, finally selecting the best piece, would offer a penny a pound less than the price. He always bought the 'bits' of meat on the butcher's board, but would nevertheless insist on feeling the legs and shoulders of mutton and other joints displayed in the shop, in order, it seemed, to console himself for not choosing to afford to buy them.

In early life, he had started as a merchant in a French port, where he made a good deal of money by exchanging English and French produce. Then he returned and settled down in Steddington, his native place, and living on something less than a fourth of his income, his money went on accumulating. He married, at forty, a girl with the mind and disposition of a loving child. He does not appear to have treated her with intentional unkindness. There is no *animus* in the winter wind that chills the life out of our flowers. She was an orphan, and had no one else to love but him—and she wanted to love him—Heaven knows how much! But he never seemed to understand it; and at last

she became chilled, and reserved, and quiet, as he was; and then she died. But he never seemed to understand even that, for I am certain he could lay his hand on his heart, and declare in all sincerity he had never had an angry word with her in his life.

It was much the same with his son, who inherited something of his mother's simple loving nature. Mr Marlow never could understand him. He gave him a good education, one of the few things in money matters Mr Marlow did without stint. But instead of being willing to be apprenticed to a money-getting trade, nothing would please the boy but music. From a child, he had a strange quiet awe of music almost amounting to worship. When he ought to have been learning his alphabet, he would sit at the old harpsichord in his father's house, not strumming it like other children, but trying patiently to puzzle out sweet sounds and harmonies. Almost as soon as he could think, Richard said he wanted to learn 'the secret of the keys'—so he called it—a secret so wonderful and strange, it is never imparted like other learning. The heart must first talk to the instrument, to make its strings respond in that living communion which alone is music; for the musical instrument is like the fabled statue—dead and cold. Neither mechanical skill nor science, nothing but pure love, can ever make it a living, breathing thing.

The boy would be a musician. All his other studies were conscientiously done as tasks, but music was a real delight. For a long time, Joseph Marlow opposed him, but after many trials he found his son was fit for nothing else; wherefore he yielded. For some years, Richard was placed under the tutelage of a famous doctor of music, now dead, who loved him as his own son, and often said he only wished to live long enough to be able to speak of his pupil with something of that splendid union of pride and humility which made Dr Blow write for his epitaph: 'Here lies Dr Blow, master to the famous Mr Henry Purcell.'

When his studies were completed, Richard Marlow was established in Steddington as a professor of music. It was in a very small way, comprising tuning pianos and a deal of humble work. And Richard abominated it; not because it was humble, but because it was impossible. It is impossible for any really good musician to teach music at so much per lesson to all comers. You may teach the firework performances of the day to any one whose fingers are supple enough, and who will devote the requisite time to acquire them, but you don't need a musician to teach *these*—that is a trade by itself.

But Richard Marlow did not teach this sort of thing. It was not that he would not, but that he could not. And when he came to find this out, and also that not more than about one person in a hundred is endowed with the real passion of music, and also that music is and must be a sealed book to the multitude, he was much disheartened. Except in two or three instances, where the love of music was inborn in his pupils, his efforts were manifest failures. People put it down of course to his incompetence, because, as they said, we take our children away from Mr Marlow, and put them with Mr Anyone-else in the town, and they play charmingly directly. Alas! it was too true. Anybody could teach the children fireworks, but Richard Marlow was a professor of music, and couldn't.

Richard failed. His name appeared in the *Gazette*. Everybody said, serve him right, including his father, who refused to help him. However, after this matter was settled, he had the wisdom to give up teaching music, and take to preaching it. He had an organ to play in the town, besides two or three music pupils, which together brought him in enough to pay his board and lodging. He then devoted all his leisure to musical composition. The false idea still exists in many minds that publishers, whether of music or literature, have entered into a solemn confederacy for the suppression of rising talent. Publishers are far too jealous of each other, and far too much alive to their own interests, to refuse a good piece of work by an unknown hand, when they know that, simply because it is by an unknown hand, they can therefore buy it for half-price. Richard's success was neither sudden nor startling. He met with many disappointments. He found that there are certain recognised habits of style and expression, to which every composer is bound to conform, until he shall have earned the right to set them at defiance. But he did succeed, by slow and laborious steps; the slower because his compositions were in that severe musical style which appeals only to the few.

No sooner, however, did he manage to raise his income to just sufficient to keep himself in respectability as a single man, than (as his father put it) 'he was fool enough to want to get married,' with no better excuse than that Jessie Graham was a sweetly pretty little girl, with a disposition much like his mother's at her age, literally penniless, and that he loved her dearly.

'Boy,' said his father to him (and it is aggravating for a man thinking of getting married to be addressed as 'Boy'), 'I don't say it to you angrily, but you are a fool. I employ the term merely as an analytical definition of your state of mind. I can understand you want to get married; that appears to be a natural law of manhood. But couldn't you—don't you think yourself, that you could—manage to make any other woman do as well? For example, a woman who has got money? Women are so very much alike, that I don't really see how it can matter which particular one you get, so long as you get your due in a fair share round, which would amount to about one woman and a very small fraction per every unmarried man.'

'By the way,' continued Mr Marlow, 'I think I owe you a sovereign;' and he pulled out a handful from his breeches-pocket.

'Bless the boy! Why don't you pick and choose one particular sovereign, and go spoony on it, and say you can never find peace or comfort but in that one, and no other will ever have any value in your eyes? You are not a fool in that respect, you know. One sovereign is as good as another, and so is one woman, for aught I know. There are bad women, and there are bad sovereigns. Of course there is a possibility of taking a bad one in either case by mistake; but bad women, like bad sovereigns, are very scarce. I repeat, I don't blame you for wanting to get married; but don't spoon, Richard—whatever you do, don't spoon—it's foolish and unphilosophical.' And the old man went and shut himself up with his books and instruments, without giving his son an opportunity to resent his doctrine.

As for Richard, he went straight off to see Jessie,

dear little girl, and settled the day for the wedding that same evening. With all his love for her, he half upbraided himself for his haste, for she was such a fond tender little thing, that seemed made only to live in sunshine, and to be petted and loved, his mind misgave him whether it would not have been wiser to wait for a bit, till he could provide her a better home, and raise her above all those household cares and troubles which so surely do beset a poor man's wife. But he was as wrong as he was right; for some of the tenderest tropical plants not only become hardy, but evolve fragrance on being transplanted to our harsher climate, and the beauty of many a woman's nature would never be fully developed but for winds of adversity, that make love's sunshine the sweeter and more precious.

As he had been strictly forbidden by his father to say anything more to him about Jessie, it was not till the night before his marriage that Richard formally apprised Mr Marlow of what was going to take place on the morrow, though he must have been well aware of the fact from other sources; but Richard's father was particularly and sourly angry.

'Dick,' said he, 'I feel as if I had lived in vain. When you were very young, I thought I saw traces of sound philosophy in some of your childish ways, but it is a sad thing to beget a fool, and humiliating to me as a father. I never felt it so much as now you are going to be married, in all probability to perpetuate the breed. I know money is no good to you—you have no desire for it, or you would have looked for it in a wife; and you ain't fit to be trusted with it—nobody is but a philosopher. I am going to make my will, Dick—going to see if I can't atone for your birth. It isn't your fault that you were born; I don't blame you for that, in fact I apologise to you for it. But I mean to leave my money for the propagation of philosophy. I should have preferred it if you were philosophical. It is much to be regretted you ain't. I must go and find those who are. I am not angry with you, Dick.'

Richard Marlow retorted in kind, and, after some unpleasant words, the two separated without so much as a good-night.

The marriage duly took place next day, when old Mr Marlow was seen hanging about the churchyard to catch sight of his son going to perform what he considered his last act of folly. The old man was then dressed in his oldest and shabbiest clothes, as if most thoroughly to discountenance the proceeding.

That was the last time old Marlow had been seen at Steddington.

CHAPTER III.

He was missed, of course. Inquiries were made in every direction, but without success. His disappearance was plainly unpremeditated, for he had ordered his dinner at five, and invited the lawyer who drew up the will that morning and saw it executed, to dine with him. Many speculations were rife as to what had become of him, and being an eccentric man, they embraced a great number of suppositions. Still, the general opinion seems to have been, that he had absented himself purposely out of disgust at his son's wedding, and that in all probability he would return before long. For this reason the search made for him was per-

haps less vigorous than it might otherwise have been. But his protracted absence gave rise to more uneasiness.

Three weeks after his disappearance, the first clue was found to what had become of the missing man. It was Mr Marlow's wig. This had been picked up by some bargemen, who found it in a bed of reeds four miles down the river which runs through Steddington. The river was accordingly dragged for some distance above and below the place indicated; but no body was found, and no other discoveries were made. The local papers were full of remarks on the case; one supported the idea that Mr Marlow's absence was merely a freak, and the wig thrown away no more than a stratagem. It urged, 'men have before now gone out ostensibly to their business, and the next thing heard of them is that they were at New York or Bombay. It is not always the surest way in these matters to look for what appears most reasonable. Men's minds often act in sheer defiance of reason, and the most improbable solution proves to be the true one. For these considerations, we think the police ought not to limit themselves to searching for a dead body.' The rival paper justly retorted that Mr Marlow's wig was not found in a street, but in a river, and therefore afforded strong presumptive evidence of suicide, or else accidental drowning. And still further, that to search for Mr Marlow alive was needless. If he *were* alive, his absence could be no concern of the public authorities; he would return when it suited his purpose; while to search for him, would only gratify his unreasoning whim of being a nine days' wonder, besides tending to protract his absence the longer. It was the manifest business of the authorities to do all they could to ascertain if the man was dead, and if so, by what means he came to his death. It would be time enough to indulge in speculations about psychological aberrations when they had exhausted the more obvious hypothesis to which the wig found in the river clearly pointed. It concluded by strongly urging a trial of the following experiment: that a piece of timber, of similar size, and, if possible, shape, to a human body, should be prepared and so weighted with lead as to approximate to the specific gravity of a man's body in the water. That the piece of timber so prepared should be thrown into the river at the place where the wig was found, and men placed to watch what became of it, follow it in its course down the river, and see whither the currents would take it. The writer of the article, who professed to have fished the river for ten miles either way, declared his belief that it would be carried down the stream, and deposited in one of two weirs, respectively three and five miles from the place where it would first be cast in.

This proposition appeared so reasonable, that it was resolved to put it in practice; and a block of wood prepared as suggested was accordingly flung into the river amid a large concourse of spectators. It did not quite float, but was yet kept from sinking too deep by large corks attached to it by cords. These corks answered the additional purpose of indicating the course taken by the piece of timber in its passage down the stream, so that the watchers always knew its position. The men were instructed on no account to interfere with it, not even should it chance to hang up